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SAFETY AT SEA

BY GEORGE VON L. MEYER, SECRETARY OF THE NAVY

It is within the power of all countries under whose flag ocean-going steamships sail or into whose ports they come to prescribe such rules and regulations to govern their equipment and navigation as would minimize the danger of such accidents as that which befell the White Star steamer *Titanic*, enlarge the possibilities of obtaining assistance, and render it possible to save the life of every person on board in the event of the sinking of the vessel. The loss of more than sixteen hundred lives in this great sea tragedy is a circumstance of which the mournful truth becomes an overpowering horror by the fact that practically every soul on board could have been saved had there been boats to carry them.

First and foremost, then, laws should be at once enacted prescribing that no passenger-steamer shall carry more persons on board, crew and passengers, than can be accommodated in the boats and on the life-rafts provided in the vessel's equipment.

The Congress of the United States unquestionably has the power to enact such laws as applying to vessels flying the American flag, and the further power to enact laws refusing clearance from any American port to any foreign vessel not complying with such laws. Federal inspection of all vessels would be necessary to see that the laws are enforced.

Every member of the crew and every passenger embarking in an ocean-going vessel should be assigned to a certain boat or raft and should be informed of his assignment; each passage ticket should designate the boat to which the holder is assigned, and there should be, in each stateroom, a diagram of the ship showing the location of the boat, the deck from which loaded, and the route by which it could be reached.

All boats and rafts should be provided with water, provisions, lanterns, and other needful equipment, and should be inspected by government inspectors before each sailing, as well as by the officers of the ship, to each of whom a boat should be assigned as his proper station and particular care.

Frequent drills of the crew in manning the boats should be made mandatory, these drills to include lowering the boats with loads equal to their passenger capacity a sufficient distance to make certain that the falls and blocks are in good condition.

Each vessel should carry a sufficient number of skilled wireless operators to insure one always being on duty. Messengers or other means of communication between the wireless operator and the officer of the watch should also be provided, so that it would be unnecessary for the operator to leave his station. The important point is that there should not be a moment of the day or night during which a distress call may be sent without its being recognized by all vessels within communicating distance.

The Government should prescribe regulations covering all wireless telegraph activities either by international agreement or by national legislation. On occasions of great disaster, such as the loss of the *Titanic*, the eagerness of irresponsible private operators to secure news interferes very seriously with the proper transmission of important messages and leads to all kinds of misinformation being sent broadcast over the world. This situation is so serious that no time should be lost in correcting it.

More than one source of power for the wireless telegraph should be installed. No apparatus of this kind, the efficiency of which may bear such a vital relation to the safety of the vessel, should be dependent on one source of power if an alternative source can be provided. In a sinking ship steam-driven dynamos stop when the water reaches the fires, but an oil-engine or storage batteries on an upper deck would operate the wireless as long as the operator could remain at the key.

The operating radius of the wireless installations of all large steamships should be increased to five hundred miles, not only for the protection of the vessel in case of disaster, but to warn other vessels of dangers to navigation.

The water-tight subdivision of steamships should be such as to afford every possible and reasonable assurance of their

safety in case of collision or grounding. The most effective structural protection against collisions on board ship consists in fitting bulkheads which are simply water-tight partitions to confine the flow of water which as a result of collision finds its way into a ship. Obviously the more numerous the bulkheads and decks, and the smaller the water-tight compartments into which a ship is divided, the greater the protection afforded. A large battle-ship will have three or even four skins on each side—the outer bottom, the inner bottom, and one or two longitudinal bulkheads.

In the mammoth ships recently constructed, too much space has been given to the unnecessary luxuries provided to attract patronage on account of the rivalry of competing lines. The space and weight devoted to swimming-tanks, tennis courts, gymnasiums, extra cafés, etc., would be better utilized in improved construction, additional boats and safety appliances, and in additional water-tight bulkheads.

A town of three thousand inhabitants requires a greater police force to protect the citizens than a village of two hundred, so also a steamer carrying thousands of passengers requires more officers and trained seamen than one formerly carrying only hundreds if equal safety to passengers in an emergency is to be secured. Such vessels should be required to carry for each boat at least one officer or efficient petty officer and six members of the crew skilled as boatmen.

The regulations in the United States Navy cover the following points: the exact location of each boat is known to every man assigned to it, and frequent drills are held in which the boats are manned, equipped, lowered, and sent away from the ship. Every boat is fitted with water, provisions, and equipment for navigating; one officer is placed in charge of each boat and is held responsible for its condition and readiness for service.

The Government owns and operates its own wireless telegraph sets, and on every vessel equipped with one there is an operator on duty and listening for calls during every minute of the day and night.

The water-tight subdivisions of United States naval vessels of recent construction are such that no ordinary accident can seriously endanger them; while at sea all doors and other openings in water-tight bulkheads are kept closed except such as must be open for the service of the ship; all these can be closed in a few seconds when the danger

signal is given; many can be closed from the bridge, others are closed by hand by men detailed for the purpose and frequently drilled in doing so.

Search-lights are carried by all men-of-war and are used in times of dangerous navigation.

United States naval vessels go at slow speed or steerage-way in a fog or in dangerous waters, and change course immediately to avoid danger.

After the *Bourgoigne* disaster a large money prize was offered by certain people who had lost relatives or friends on board the ill-fated ship for the best device for saving large numbers of men in the event of the sinking of a vessel. The award of this prize was made by a committee during or just after the Paris Exposition in 1900. The device suggested consisted in making the bridge of the vessel in the form of a raft or cigar-shaped vessel which could be easily and surely detached from the ship itself when she sank, and which would support six or seven hundred passengers. A similar and perfectly practicable suggestion of having a detachable and floating deck-house to support several hundred passengers has also been made.

Either one of these two devices, had it been fitted to the *Titanic*, would doubtless have meant saving nearly all the lives of those on board. There is no inherent impossibility in fitting both of them should it be desired, and the provision of one or both would insure against a repetition of such accidents even should the sinking of the vessel be so rapid as to make it impossible to lower and fill all the boats.

After all has been done that can be done by laws and international agreement to reduce the dangers of the sea, human beings will take chances and will gamble with Fate; against the accidents that may result from indulgence of this human propensity, perhaps the surest safeguard is the one that the underwriters may set up by refusing insurance to a vessel not properly built and equipped or recklessly speeded or navigated in dangerous lanes.

GEORGE VON L. MEYER.